

DESCRIPTION OF A NEW SPECIES OF DIADOCIDIA  
FROM CALIFORNIA

(Diptera: Mycetophilidae)

PAUL H. ARNAUD<sup>1</sup> AND CHARLES P. HOYT<sup>2</sup>

The small subfamily Diadocidiinae of the family Mycetophilidae was previously known in North America by only two recent species, *Diadocidia ferruginosa* (Meigen), 1830 and *Diadocidia borealis* Coquillett, 1900 as well as a fossil form, *Diadocidia terricola* Scudder, 1878. The discovery of a new species is therefore of interest, and it is here described so that its name will be available for discussion in a forthcoming morphological paper.

The type locality of the new species is in a partially wooded field on the Stanford University campus about 100 yards northeast of the Stanford Mausoleum. This area has been partially replanted with Eucalyptus trees (*Eucalyptus globulus*). Some of the trees have been cut down, and the resultant rotting stumps provide an attractive breeding place. Adults have been collected in large numbers around and within the hollows of these stumps, while the larvae have been found in moderate numbers in the decaying wood.

The authors are indebted to Mr. Paul Freeman and the authorities of the British Museum (Natural History) for the gift of a male specimen of *Diadocidia ferruginosa* and to Dr. Alan Stone and the authorities of the United States National Museum for the loan of specimens of *Diadocidia borealis*.

***Diadocidia stanfordensis*** Arnaud and Hoyt, new species

*Male*.—*Head* mainly gray-black; palpi yellowish-brown; antennae with first two segments yellow-brown; remaining 14 segments uniformly gray with short yellow hairs. Ratio of antennal segments 8:9:26:16:15:15:15:15:14:14:14:13:12:12:13. *Thorax* grayish-yellow, with yellowish colored hairs; dorsally with a median and a pair of lateral, lightly colored vittae which converge posteriorly; scutellum with yellowish colored hairs. Coxae to femora yellow-brown; tibiae, tarsi and spurs dark grey.

Ratio of length of leg segments

	C	Tr	F	Ti	T1	T2	T3	T4	T5	Claws
Fore leg	30	7	46	65	43	15	12	8	7	2
Mid leg	32	7	52	75	42	13	10	6	5	2
Hind leg	25	7	64	101	41	13	10	6	6	2

Wing venation as illustrated in Figure 1, D. Veins and membrane conspicuously hairy. Halteres yellowish-brown. *Abdomen* unicolorous, gray, with light colored hair. Segments one and eight shortened; segment one a

<sup>1</sup> Natural History Museum, Stanford University, California.

<sup>2</sup> South Pacific Commission, Boite Postal No. 9, Noumea, New Caledonia.

little longer than half length of second; segment eight less than half length of seventh. Male terminalia colored as abdomen. The characteristic terminalia are illustrated in Figures 1, A-C. Body length, 3.5 mm.; wing length, 3 mm.

*Female*.—Similar to male with exception of sexual armature. Fore tarsi not broadened. Terminal abdominal appendages as illustrated in Figures 1, E. Body length, 4 mm.; wing length, 4 mm.

*Diadocidia stanfordensis*, which is related to *ferruginosa*, may be readily separated by the characteristic divided dististyle in conjunction with the wing venation. The spermathecal structure in the female may also prove to be characteristic only of this species.

*Holotype* male, STANFORD UNIVERSITY, SANTA CLARA COUNTY, CALIFORNIA, April 22, 1952, (C. P. Hoyt), on slide. Allotype, female, same locality as holotype, collected January 19, 1952, (C. P. Hoyt), on slide. Holotype and allotype deposited in the collection of the Department of Entomology, California Academy of Sciences, San Francisco. Paratopotypes: 342 specimens, 327 males, 15 females, same locality as holotype, on the following dates and method of preservation: Slides: male, 22.IV.52 (Hoyt); 2 males, 19.I.52 (Hoyt). Alcohol: 19 males, 23.IV.52 (Arnaud); 45 males, 3 females, 26.I.53 (Arnaud); 152 males, 7 females; 5.II.53 (Arnaud); 68 males, 5 females, 18.II.53 (Arnaud). Pinned: 5 males, 26.II.52 (Arnaud); 20 males, 11.III.54 (Arnaud); 15 males, 25.III.54 (Arnaud). Paratopotype slides have been deposited in the collections of the United States National Museum and the British Museum (Natural History).

Our method of collecting population samples of the new species has resulted in an interesting ratio of approximately 20 males to 1 female.

The larva of *stanfordensis* is enclosed in a slime tube which it secretes as it moves along over the surface of the wood. The track left by this collapsed tube resembles that of a small slug or snail. The larva of *ferruginosa* has been figured and discussed by Madwar (1937:36-39) and differs from *stanfordensis* in the number of inner mandibular teeth, *ferruginosa* having two, *stanfordensis* one.

#### CHECKLIST OF RECENT DIADOCIDIA:

1. *borealis* Coquillett, 1900.....North America
2. *ferruginosa* Meigen, 1830.....Europe, North America
3. *ferruginosa* var. *thoracica* Okada, 1936.....Japan
4. *nigripalpis* Edwards, 1940.....Chile, Brazil

5. *spinosula* Tollet, 1948.....Belgium  
 6. *stanfordensis* Arnaud and Hoyt, 1956.....California  
 7. *valida* Mik, 1874.....Central Europe  
 8. species (Freeman, 1951).....Tasmania

## LITERATURE CITED

FREEMAN, PAUL

1951. Diptera of Patagonia and South Chile. Based mainly on material in the British Museum (Natural History). Part III—Myceto-

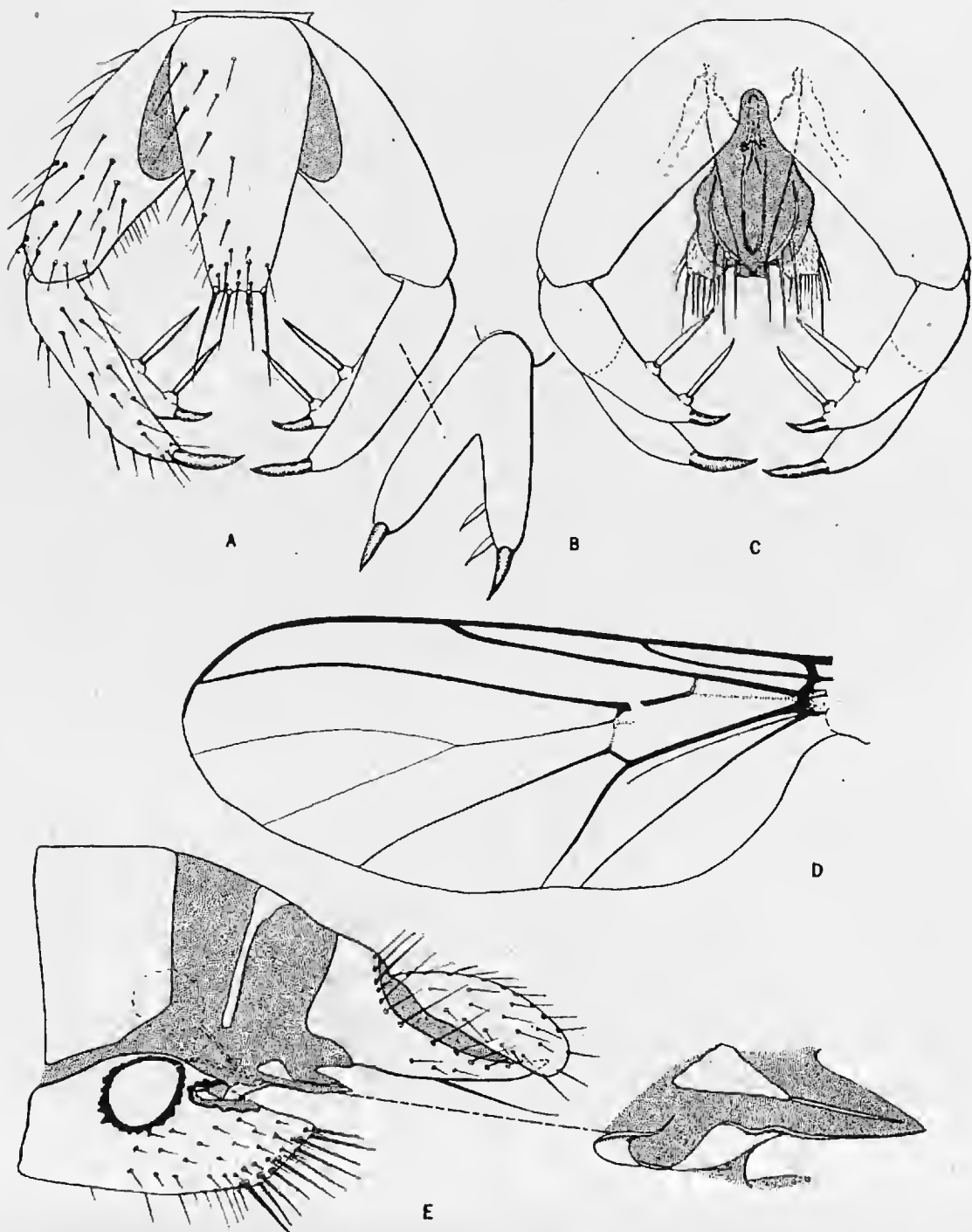


Fig. 1. *Diadocidia stanfordensis*: A. Dorsal aspect of male terminalia; B. Apical aspect of dististyle; C. Ventral aspect of male terminalia; D. Wing of male; E. Lateral aspect of terminal abdominal segments of female.